

Response to Office Action Dated 12/31/09

S/N: 10/626,496

**LISTING OF THE CLAIMS**

The following claims replace all prior claims in the application:

1. (Currently Amended) A system for bi-directional communication within a power distribution system, the system configured to find an endpoint, the endpoint having an endpoint transceiver in electrical communication with a power distribution line, the power distribution line being within the power distribution system, the endpoint being identified by a unique I.D., the system comprising:

a substation transceiver electrically coupled to a power distribution line within the power distribution system;

a substation circuit in electrical communication with the substation transceiver, the substation circuit programmed to:

map the unique I.D. for the endpoint to a base frequency within a bandwidth and to control the ~~endpoint~~ substation receiver to transmit a find endpoint data packet onto the power distribution network, the find endpoint data packet including the unique I.D. and the base frequency; and

assign a status to the base frequency upon receiving a signal from the endpoint, the status indicating that the substation transceiver is receiving signals in the frequency bandwidth.

2. (Original) The system of claim 1 wherein the substation circuit is further programmed to:

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determine whether the substation transceiver stopped receiving a signal within the bandwidth corresponding to the base frequency assigned to the endpoint transceiver; and

control the substation transceiver to retransmit the find endpoint data packet containing the unique I.D. of the endpoint and the base frequency assigned to the endpoint transceiver.

3. (Original) The system of claim 1 wherein the substation circuit is further programmed to control the substation transceiver to repeatedly transmit the find endpoint data packet in a predetermined interval until the substation transceiver receives a signal from the endpoint identified by the unique I.D.

4. (Original) The system of claim 3 wherein the predetermined interval is about 1 minute.

5. (Previously Presented) The system of claim 3 wherein the substation circuit is further programmed to control the substation transceiver to repeatedly transmit the find endpoint data packet in a predetermined interval, the repeated transmission of the data packet being interrupted only by a prescheduled transmission of an alternative data packet.

6. (Original) The system of claim 2 wherein the substation transceiver and substation circuit are located at a first power distribution substation, the system further comprising:

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a second substation transceiver and a second substation circuit, the second substation transceiver being in electrical communication with the second substation circuit, the second substation transceiver and the second substation circuit being located at a second power distribution substation; and

a control server in data communication with the substation circuit at the first power distribution substation and the substation circuit at the second power distribution substation;

wherein, upon a loss of communication between the endpoint and the substation transceiver at the first power distribution substation, the control server instructs the substation circuit at the second substation to map the unique I.D. identifying the endpoint to a base frequency within a bandwidth and to control the substation transceiver at the second power distribution substation to transmit a find endpoint data packet over the power distribution system, the data packet including the unique I.D. for the endpoint and the base frequency, and to assign a status to the base frequency upon receiving a signal from the endpoint, the status indicating that the substation transceiver located at the second power distribution substation is receiving signals in the bandwidth corresponding to the base frequency.

7. (Canceled)